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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/649,661	08/28/2003	Shigeki Imai	0756-7191	6925
31780	7590	05/13/2009	EXAMINER	
ERIC ROBINSON			CHU, CHRIS H	
PMB 955			ART UNIT	
21010 SOUTHBANK ST.			PAPER NUMBER	
POTOMAC FALLS, VA 20165			2874	
			MAIL DATE	DELIVERY MODE
			05/13/2009	PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b>	<b>Applicant(s)</b>	
	10/649,661	IMAI ET AL.	
	<b>Examiner</b>	<b>Art Unit</b>	
	CHRIS H. CHU	2874	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on 30 January 2009.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 1-36 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-36 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 28 August 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \*    c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)                       | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | Paper No(s)/Mail Date. _____                                      |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>1/09</u> .  | 6) <input type="checkbox"/> Other: _____                          |

## **DETAILED ACTION**

### ***Response to Amendment***

Applicant's Amendment filed January 30, 2009 has been fully considered and entered.

### ***Claim Objections***

In claims 19 and 28, "different layers each other" will be changed to "different layers from each other" for the purposes of examination.

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

**Claims 1-36 are rejected under 35 U.S.C. 103(a) as being unpatentable over Shannon (5,268,679).**

Regarding claims 1, 10, 19 and 28, Shannon discloses an electronic circuit device (100 in Fig. 2) comprising an electronic circuit substrate (10 of level 1 in Fig. 2) over which an optical shutter (31 in Fig. 3), a plurality of optical sensors (34 of levels 1 and up in Fig. 3) and an electronic circuit including a plurality of laminated layers,

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wherein each layer includes thin film transistors (33 of levels 1 and up in Fig. 3) formed over said transparent substrate, wherein said optical shutter controls transmission or non-transmission of a part of an optical signal (O in Fig. 2) from outside, wherein the optical sensor is connected to an electric source (13 in Fig. 3) through the thin film transistor, wherein the optical sensors convert said another part of said optical signal into an electronic signal and wherein each of said optical sensors are formed on different layers from each other in the plurality of laminated layers.

Still regarding claims 1, 10, 19 and 28, Shannon teaches the claimed invention except for specifically stating the optical sensor connected to a buffer, wherein the electronic signal is inputted to the circuit through the buffer. However, buffers are well known in the art and as such, one having ordinary skill would have found it obvious to connect the output from the optical sensor to the electronic circuit through a buffer for the purpose of impedance matching and to help the circuit perform more effectively.

Regarding claims 2-5, 11-14, 20-23 and 29-32, Shannon teaches the claimed invention except for specifically stating the thin film transistors (hereafter referred to as TFTs) crystallized by a heat treatment using a metal catalyst or by irradiating a laser beam. However, both of these methods of effecting crystallization of the semiconductor layer of TFTs are well known in the art, and as such, one having ordinary skill in the art at the time of the invention would have found it obvious to use method including the claimed methods in any of the layers of TFTs depending on the production cost and reliability of the processes.

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Regarding claims 6, 7, 15, 16, 19, 24, 25, 33 and 34, Shannon teaches the claimed invention except for specifically stating the optical sensor to be an amorphous silicon photodiode, an amorphous silicon phototransistor, a polysilicon photodiode or a polysilicon phototransistor. However, all of these types of optical sensors are well known in the art, and as such, one having ordinary skill in the art at the time of the invention would have found it obvious to use any type of sensor including the claimed sensors depending on the cost and performance of the sensors. Further, it is well known that all of these types of optical sensors comprise different semiconductive layers.

Regarding claim 8, 17, 26 and 35, Shannon discloses the shutter comprising a liquid crystal sandwiched between two transparent substrates in Fig. 2 and column 5, lines 1-4.

Regarding claim 9, 18, 27 and 36, Shannon discloses a polarizing plate (39 in Fig. 2) disposed over the transparent substrate and nearby the shutter.

### ***Response to Arguments***

Applicant's arguments, with response to claims have been considered but are moot in view of the new grounds of rejection.

### ***Conclusion***

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP

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§ 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Chris H. Chu whose telephone number is 571-272-8655. The examiner can normally be reached on 8:30 AM - 5:00 PM Mon-Fri.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Uyen-Chau Le can be reached on 571-272-2397. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Any inquiry of a general or clerical nature should be directed to the Technology Center 2800 receptionist at telephone number (571) 272-1562.

/Uyen-Chau N. Le/  
Supervisory Patent Examiner, Art Unit 2874

Chris H. Chu  
/Chris Chu/  
Patent Examiner  
May 4, 2009

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